Listing of Claims:

1. (Previously presented) A substantially purified peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of osteogenesis by BMP-2 in mammalian cells.

2. (Canceled)

3. (Previously presented) A substantially purified peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of calcification in vertebrate cells.

4. (Previously presented) A substantially purified peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of calcification in mammalian chondrogenic and osteogenic precursor cells.

5. (Previously presented) A composition comprising:

(a) a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases degree or rate of osteogenesis by BMP-2 in mammalian cells; and

(b) at least one member selected from the group comprising a TGF-ß family member, BMP-2, BMP-4, BMP-7, and demineralized bone matrix.

6. (Canceled)

7. (Canceled)

8. (Withdrawn) An isolated DNA encoding a functional peptide having the amino acid sequence of SEQ ID No: 1.

9. (Withdrawn) A nucleic acid sequence of SEQ. ID. No. 2.

10. (Withdrawn) A nucleic acid construct comprising an expression vector operatively linked to a nucleic acid sequence encoding a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of osteogenesis by BMP-2 in mammalian cells.

11. (Previously presented) A medicament for use in inducing the rate or degree of osteogenesis in a vertebrate including:

(a) a therapeutically effective dosage of a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of osteogenesis by BMP-2 in mammalian cells; and

(b) a therapeutically effective dosage of one of BMP-2 or demineralized bone matrix.

12. (Previously presented) A medicament for use in inducing the rate or the degree of calcification in a vertebrate including a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of calcification in vertebrate cells.

13. (Previously presented) A medicament for use in inducing the rate or the degree of calcification in a vertebrate including a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of calcification in mammalian chondrogenic and osteogenic precursor cells.

14. (Withdrawn) A method of detecting the ability of BBP to enhance the residency time of a TGF-ß homologous molecule comprising:

(a) applying an amount of the TGF-ß homologous molecule at a first and second selected location;

(b) applying a selected amount of BBP at the first selected location;

(c) detecting the amount of the TGF-ß homologous molecule at the first and second location after a selected time period; and

(d) calculating the difference between the amount of the TGF-ß homologous molecule at the first and second location.

15. (Withdrawn) The method of claim 14, wherein TGF-ß homologous molecule is one of: BMP-2, BMP-4, or BMP-7.

16. (Withdrawn) A method of enhancing the rate or degree of osteogenesis in vertebrate tissue, comprising applying to the tissue:

(a) a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases degree or rate of osteogenesis by BMP-2 in mammalian cells; and

(b) one of BMP-2 or demineralized bone matrix.

17. (Withdrawn) A method of inducing calcification of vertebrate tissue, comprising applying to the tissue a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of calcification in vertebrate cells.

18. (Withdrawn) A method of inducing calcification of mammalian osteogenic tissue, comprising applying to the tissue a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of calcification in mammalian chondrogenic and osteogenic precursor cells.

19. (Withdrawn) A method of enhancing the rate or degree of osteogenesis in vertebrate tissue, comprising:

(a) administering osteogenic cells to the patient at a location proximate to the desired location of osteogenesis;

(b) administering a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of osteogenesis by BMP-2 in mammalian cells; and

(c) administering one of BMP-2 or demineralized bone matrix.

20. (Withdrawn) A method of enhancing the rate or degree of calcification in vertebrate tissue, comprising:

(a) administering osteogenic cells to the patient at a location proximate to the desired location of calcification;

(b) administering a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of calcification in vertebrate chondrogenic and osteogenic precursor cells.

21. (Withdrawn) A method of enhancing the rate or degree of osteogenesis in a vertebrate, comprising:

(a) treating vertebrate mesynchymal stem cells with one of BMP-2 or demineralized bone matrix to induce osteogenesis of the cells;

(b) treating the vertebrate mesynchymal stem cells with a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of osteogenesis by BMP-2 in vertebrate cells; and

(c) administering the vertebrate mesynchymal stem cells to the patient at a location proximate to the desired location of osteogenesis.

22. (Previously presented) An article of manufacture comprising a peptide immobilized on a solid support, wherein said peptide comprises the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of osteogenesis or calcification by BMP-2.

23. (Previously presented) The article of manufacture of claim 38 further including BMP-2 or demineralized bone matrix.

24. (Canceled)

25. (Previously presented) An implant for use in vivo comprising, a substrate having a surface, wherein at least the surface of the implant includes a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof, wherein said fragment increases the degree or rate of osteogenesis or calcification by BMP-2.

26-28. (Canceled)

29. (Withdrawn) A nucleic acid construct comprising an expression vector operatively linked to a nucleic acid sequence encoding a peptide comprising the amino acid sequence of SEQ ID No: 1 or a fragment thereof.

30. (Canceled)

31. (Canceled)

32. (Withdrawn) An antibody having selective binding to any portion of a peptide comprising the amino acid sequence of SEQ ID No: 1, 3 or 4.

33-35. (Canceled)

36. (Withdrawn) A method of detecting the presence of BBP in sample comprising: (a) obtaining an antibody having selective binding to any portion of a peptide comprising the amino acid sequence of SEQ ID No: 1, 3 or 4; (b) exposing the sample to the antibody having selective binding to any portion of a peptide comprising the amino acid sequence of 1, 3 or 4; (c) visualizing the complex of a peptide comprising the amino acid sequence of SEQ ID No: 1 and antibody having selective binding to any portion of a peptide comprising the amino acid sequence of 1, 3 or 4.

37. (Withdrawn) A method of detecting the presence of a nucleic acid encoding BBP in sample comprising:

(a) obtaining a nucleic acid complimentary to and having selective binding to any portion of a nucleic acid sequence of SEQ ID No: 2;

(b) exposing the sample to the nucleic acid complimentary to and having selective binding to any portion of a nucleic acid sequence of SEQ ID No: 2;

(c) visualizing the complex of the nucleic acid encoding BBP and an nucleic acid complimentary to and having selective binding to any portion of a nucleic acid sequence of SEQ ID No: 2.

38. (Previously presented) The article of manufacture according to claim 22 wherein said fragment increases the degree or rate of osteogenesis by BMP-2 in mammalian cells.

39. (Previously presented) The article of manufacture according to claim 22 wherein said fragment increases the degree or rate of calcification in vertebrate cells.

40. (Previously presented) The implant according to claim 25 wherein said fragment increases the degree or rate of calcification in vertebrate cells.

41. (Previously presented) The implant according to claim 25 wherein said fragment increases the degree or the rate of osteogenesis by BMP-2 in mammalian cells; and wherein said implant further includes one of BMP-2 or demineralized bone matrix.

42. (Previously presented) The implant of claim 40, wherein at least the surface of the implant includes at least one of chondrogenic or osteogenic precursor cells.

43. (Previously presented) The implant of claim 25, wherein the substrate is formed into the shape of a pin, screw, plate, or prosthetic joint.

44. (Withdrawn) The nucleic acid according to claim 29 wherein said fragment increases the degree or rate of calcification in vertebrate cells.

45. (Withdrawn) The nucleic acid according to claim 29 wherein said fragment increases the degree or rate of calcification of mammalian chondrogenic and osteogenic precursor cells.

46. (Withdrawn) A transformant obtained by introducing the nucleic acid construct of claim 29 into a host cell.

47. (Withdrawn) The antibody according to claim 32 wherein said antibody decreases the degree or rate of osteogensis by BMP-2 in mammalian cells.

48. (Withdrawn) The antibody according to claim 32 wherein said antibody decreases the degree or rate of calcification in vertebrate cells.

49. (Withdrawn) The antibody according to claim 32 wherein said antibody decreases the degree or the rate of calcification in mammalian chondrogenic or osteogenic precursor cells.